

Seismic Safety Commission  
Minutes of Meeting  
January 15, 2004  
California Institute of Technology, Millikan Board Room  
1200 East California Blvd.  
Pasadena, California

**Members Participating**

Stan Y. Moy, Chairman  
Lucy Jones, Vice Chair  
Andrew Adelman  
Mark Church  
Bruce Clark  
Lawrence T. Klein  
Celestine Palmer  
Donald R. Parker (arr. 9:03 a.m.)  
Daniel Shapiro  
Don Manning

**Members Absent**

Senator Richard Alarcon/Chris Modrzejewski  
Linden Nishinaga  
Jimmie R. Yee

**Staff Present**

Richard McCarthy  
Robert Anderson  
Karen Cogan  
Henry Reyes  
Henry Sepulveda  
Fred Turner

**I. CALL TO ORDER/ROLL CALL**

Chairman Stan Moy called the meeting of the Seismic Safety Commission to order at 9:00 a.m. Executive Assistant Karen Cogan called the roll and confirmed that a quorum was present.

**II. CHAIRMAN'S REMARKS**

Chairman Moy introduced Ms. Elizabeth Kleider\*, Director of Government Relations, California Institute of Technology, and invited her to address the Commission.

Ms. Kleider\* stated that earthquake programs are a very important component of Cal Tech's work, and she thanked the Seismic Safety Commission and other government agencies for their assistance. She noted the state has made substantial progress in earthquake mitigation since the Northridge earthquake ten years ago. She said Cal Tech is part of a U.S. Geological Survey (USGS) coalition advocating for increased federal funding for research activities. She expressed her appreciation to Senator Scott and Senator Lieu for their support.

Chairman Moy thanked Commissioner Lucy Jones for helping to arrange the meeting at Cal Tech.

## Remembering the Northridge Earthquake

Chairman Moy invited commissioners to share their recollections of the Northridge earthquake.

Commissioner Jones commented that California has been lucky to have no major earthquakes in densely populated urban areas for the past decade. She emphasized the importance of the Commission's role in keeping the state's memory refreshed so that mitigation activities continue to have a high priority.

Commissioner Don Manning noted that the City of Los Angeles had been working on mitigation for ten years before the Northridge earthquake, and those efforts were very instrumental in the city's ability to handle the emergency. However, in reviewing the recommendations made after the Northridge earthquake, he observed that many items still have not been fixed. Commissioner Manning acknowledged that considerable progress has been made in some areas, and ongoing work is being done.

Commissioner Bruce Clark said he was in his home in Orange County at the time the Northridge earthquake occurred. He added that he had an opportunity to see the damage to freeway overpasses and experience firsthand the disruption that resulted.

Commissioner Dan Shapiro remarked that there are significant lessons learned in each major earthquake. For example, the Long Beach earthquake in 1933 taught the state about school safety, and the 1971 San Fernando earthquake revealed problems with hospitals. Commissioner Shapiro noted the Northridge earthquake pointed out the dangers of soft-story parking structures and tilt-up buildings, as well as the need to be more diligent in design and construction.

Commissioner Don Parker said he experienced the 1989 Loma Prieta earthquake and helped respond to the freeway collapse in Oakland. He noted the urban search and rescue (USAR) response to the Northridge earthquake demonstrated that USAR teams can be effectively deployed from one part of the state to another. He added that the state appears to be moving in the right direction by addressing USAR needs, but more needs to be done.

Commissioner Andrew Adelman commented that he was working in the Bay Area when the Northridge earthquake occurred. He agreed with Commissioner Manning that there are many issues that still need to be addressed. Commissioner Adelman observed that California's mitigation efforts have paid off in recent earthquakes because few lives have been lost. He noted that while comparable earthquakes resulted in 30,000 lives lost in Iran, 20,000 in Mexico City, and many thousands in Armenia and Turkey, there were fewer than 50 deaths in the Loma Prieta earthquake and 20 to 30 deaths in the Northridge earthquake. Commissioner Adelman urged the Commission to continue its important work to protect life safety in California.

Chairman Moy welcomed and acknowledged Ms. Pat Snyder, former member and chair of the Seismic Safety Commission.

Chairman Moy noted Commissioners Manning, Nishinaga, Palmer, and Clark would be participating in the Earthquake Day events at Cal Tech on Saturday, January 17. He encouraged

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other interested commissioners to take part in those events as well.

### **III. APPROVAL OF NOVEMBER 13, 2003 COMMISSION MEETING MINUTES**

Chairman Moy noted Commissioner Linden Nishinaga recommended a change on Page 12. In the fourth full paragraph on that page, Commissioner Nishinaga noted that the reference to the 2002 California Building Code in the first line should be changed to the 2001 California Building Code.

ACTION: Commissioner Clark made a motion, seconded by Commissioner Jones, that:

*The Commission approve the November 13 minutes as amended.*

\* Motion carried, 10 - 0.

### **IV. EXECUTIVE DIRECTOR'S REPORT**

#### **Budget Update**

Executive Director Richard McCarthy invited Commissioner Lawrence Klein to provide an overview of the latest budget projections.

Commissioner Klein reviewed the latest budget projections. He said the Commission can expect to have \$8,000 to \$9,000 at year-end if no additional projects are undertaken. These funds are necessary to cover unexpected costs that usually arrive at the end of the fiscal year.

Mr. McCarthy reported that the Commission is awaiting payment of a \$34,000 invoice for oversight activities related to the Pacific Earthquake Engineering and Research (PEER) Center.

Mr. McCarthy observed that the Governor's proposed budget for FY 04/05 provides a stable level of funding for the Commission. He said there are ongoing discussions about consolidating and streamlining state agencies, boards, and commissions during the current fiscal year, and he promised to keep the Commission updated about those developments.

Mr. McCarthy drew attention to the copy of his letter to the Governor offering to provide a briefing on seismic issues. He said he also sent copies of the *California Earthquake Loss Reduction Plan*, the Commission's USAR recommendations, and the recently released Earthquake Shaking Potential Map. Mr. McCarthy added that he would call on commissioners to accompany the staff when the briefing takes place.

#### **FEMA Appeal**

Mr. McCarthy noted the meeting packet contains a copy of Senator Feinstein's letter requesting that the Federal Emergency Management Agency (FEMA) arrange a face-to-face meeting to discuss audit issues. He said FEMA representatives contacted the staff last week and reported that an oral interview would be granted. He asked Commissioners Clark, Shapiro, Manning, and

Chairman Moy to let the staff know what dates they will be available. He stated that Commission representatives will meet with FEMA's Region IX staff in advance to plan the interview presentation. He added that he also planned to ask Mr. Paul Jacks, from the Governor's Office of Emergency Services (OES), and a representative from Senator Feinstein's staff to be present during the oral interview.

For the benefit of new commissioners, Mr. McCarthy explained that the dispute arose from FEMA's decision after an audit to disallow \$216,000 in commissioner time that was contributed to work on the Northridge earthquake report.

### **Homeland Security Issues**

Mr. McCarthy reported that Commissioner Parker and the staff met recently with the State Office of Homeland Security to discuss possible collaborative activities. He noted these discussions will continue, and he said he would provide a further update at the March meeting.

### **2004 Commission Meeting Schedule**

Mr. McCarthy drew attention to the proposed meeting schedule. He noted there will be no regular Commission meeting in February.

Mr. McCarthy suggested holding a one- or two-day meeting in Paso Robles in March to take testimony about the impacts of the December 22 San Simeon earthquake. He proposed compiling the comments made by guest speakers at that meeting and then developing a series of recommendations and conclusions.

Commissioner Adelman supported having the March meeting in Paso Robles. He recommended inviting the local building official.

Commissioner Jones noted aftershocks are likely in the area for a couple years, so the Commission could experience some seismic activity during its visit.

Commissioner Shapiro said he thought meeting in Paso Robles was an excellent idea. He suggested inviting disaster relief people, insurance representatives, and local government officials.

Commissioner Jones commented that the seismic risk in the Paso Robles and San Simeon area may have been underestimated. She said many local residents were concerned about possible damage to the Diablo Canyon nuclear power plant, and Senator Boxer has called for an evaluation of whether the seismic assessment for that facility was adequate.

Chairman Moy suggested holding the meeting on Friday, March 13, so Assemblyman Maldonado could attend.

Staff Geologist Robert Anderson stated that the Paso Robles city manager and county officials requested that the Commission meeting be held on Friday, March 13, because a major planning

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meeting will be taking place on Thursday, March 12.

Commissioners asked about travel arrangements. Mr. Anderson said it takes approximately five hours to drive to Paso Robles from Sacramento. Commissioner Shapiro added that Paso Robles is about a four-hour drive from San Francisco.

After some discussion, commissioners agreed to schedule the meeting for Friday, March 13, in Paso Robles.

### **Adoption of 2003 Annual Report**

Ms. Cogan presented a revised draft of the Commission's 2003 Annual Report. She thanked the commissioners who submitted comments and suggestions after the December meeting.

Ms. Cogan noted 2003 was a busy year for the Commission. She said highlights included the release of shaking maps in April at the Commission meeting in San Jose, completion of the unreinforced masonry (URM) building status report in June, the Year 3 report for PEER in August, the USAR report in September, and the initiative progress report in December. Ms. Cogan said another major accomplishment was the award from the Western States Seismic Policy Conference for the Commission's gas safety report. She also congratulated Commissioner Shapiro for winning the state's 2003 Alquist Award for his many contributions to seismic safety. Ms. Cogan recommended that the Commission approve the 2003 Annual Report.

**ACTION:** Commissioner Shapiro made a motion, seconded by Commissioner Church, that:

*The Commission adopt the 2003 Annual Report as presented.*

\* Motion carried, 10 - 0.

## **V. COMMITTEE REPORTS**

### **Ad Hoc Committee on School Safety**

Commissioner Jones reported that the Ad Hoc Committee on School Safety met in Los Angeles on January 14. She said four local building officials made presentations about private school safety requirements in Los Angeles, Pasadena, Imperial County, and San Bernardino. The committee plans to invite officials from northern California to make similar presentations at its February 13 meeting. Commissioner Jones added that there appears to be significant variation in the standards applicable to private schools and the level of enforcement.

Chairman Moy asked if the committee was looking at charter schools. Commissioner Jones explained that charter schools fall under either public or private school jurisdiction.

Commissioner Shapiro commented that the January 14 meeting was extremely informative and helpful. He thanked Staff Structural Engineer Henry Reyes for coordinating the meeting.

**VI. BRIEFING ON DECEMBER 22, 2003 SAN SIMEON EARTHQUAKE AND  
DECEMBER 26, 2003 EARTHQUAKE IN BAM, IRAN**

Commissioner Jones displayed slides showing the location of the 6.5 earthquake that occurred on December 22 near San Simeon, historical earthquakes in the area, and locations of reported damage. She noted the event was a thrust-faulting earthquake with numerous aftershocks. She said Paso Robles suffered some severe damage to URM buildings. She added that there were few seismic data collection points in the area.

Commissioner Manning asked how much it would cost to install better instrumentation. Commissioner Jones responded that about \$160 million has been spent so far on 7,000 instrument stations in the U.S., and about half to two thirds of those are in California. She estimated that at least \$80 million has been spent on California stations. Because the instrumentation program is about one third completed, it will probably cost at least another \$50 million to install the remaining stations. Commissioner Jones stated that it costs about \$40 million per year to operate all the stations in the U.S., but California only spends about \$9 million per year. She expressed her opinion that the state of should be spending \$12 million to \$15 million per year.

Mr. Anderson reported that he and Senior Structural Engineer Fred Turner visited the Paso Robles area on January 14 to look at some of the damaged structures and observe the effects of the earthquake. He noted the epicenter was located on land owned by the Hearst Corporation, so access has been very restricted. Fly-over assessments have reported no signs of surface rupture, although there have been some minor rockslides, slumps, and landslides. Mr. Anderson said the California Geological Survey used velocity maps to identify potential landslide areas.

Mr. Turner gave a brief overview of the demographics of San Luis Obispo County. He said preliminary estimates are that the December 22 earthquake caused about \$250 million in damage, and a federal disaster was declared. He noted that the town of Oceano, located along the coast, reported damage to buildings and infrastructure due to lateral spreading on sandy soil. In Paso Robles, a new hot sulphur spring emerged in the City Hall parking lot. Mr. Turner stated that most of the damaged buildings were historic URMs that had not been retrofitted. The well-known Acorn building in downtown Paso Robles collapsed, and two people were killed as they attempted to run to the street. Mr. Turner observed that retrofitted buildings generally fared well, although some experienced some damage. The Atascadero City Hall building with a masonry veneer had been partially retrofitted, but the unreinforced portion was severely damaged. Mr. Turner reported that the local middle school, a pre-Field Act building that was retrofitted in 1959, was closed because of extensive damage. Mr. Turner attributed many of the problems to poor quality design and construction and lax code enforcement.

Mr. Turner reported that some businesses and residences experienced nonstructural damage. In particular, he noted, wineries in the area lost substantial quantities of wine because stacked storage systems for wine barrels failed, a problem that was identified when the Commission met in Napa a couple years ago.

Mr. Anderson summarized damage to utilities and infrastructure. He said most of the water and

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gas system problems in Oceano were due to poor soils. He stated that all ten dams in the area were inspected, and only two had minor cracks. Mr. Anderson noted many Pacific Gas & Electric customers lost power for a day or two. Although there were concerns about the Diablo Canyon nuclear power plant, no significant damage was reported. Mr. Anderson commented that a facility for spent nuclear fuel is being considered for the area, but that project is still in the early environmental assessment stage.

Commissioner Klein asked if there were any estimates of how much it would cost to repair the damage to the Atascadero City Hall. Mr. Turner offered to find out and report back.

Commissioner Adelman commented that seismic improvements generally cost about 1 or 2 percent of the total cost of a new building, and about 20 percent of a retrofitted building; he added that post-earthquake repairs are much more expensive, often as much as 40 or 50 percent of the total repair cost.

Commissioner Manning asked if any of the wineries had been using a braced rack system. Mr. Turner responded that all were using standard racks. He said many wineries are reluctant to switch to braced racks because standard racks allow quicker and easier access to the stored barrels. He added that the lessons learned in this earthquake may cause them to re-examine that belief.

Commissioner Shapiro asked if the Acorn building in downtown Paso Robles had any unusual characteristics. Mr. Turner responded that the roof failure was rather unusual. He said the building had windows on its end walls rather than solid walls, and the quality of the mortar was very poor.

Commissioner Jones commented that the earthquake may provide an opportunity to collect data on the cost-effectiveness of retrofitting. Mr. Turner said many owners of retrofitted structures commented that they were thankful they spent money to retrofit their buildings.

Chairman Moy encouraged the staff to keep the Commission posted on possible issues and new problems.

Commissioner Jones said she had heard that the two people who were killed in Paso Robles had been running outside because their employer had told them to do so. Mr. Turner confirmed that understanding. He noted the Commission needs to work harder to reinforce the message that people should duck, cover, and hold. He added that more lives have been lost at the perimeters of URMs than inside them because brick tends to fall outward.

Mr. Anderson gave a brief report on the magnitude 6.6 earthquake that struck Bam, Iran, on December 26, 2003. He displayed a map of the region and pointed out the location of the epicenter. Mr. Anderson said Bam had a population of 120,000, and many lives were lost in the earthquake. He noted about 85 percent of the total building stock, consisting primarily of adobe brick structures, was destroyed. Reconstruction costs are estimated at over \$1 billion.

Chairman Moy thanked Mr. Anderson for the update. He noted the San Simeon earthquake and the Bam earthquake were similar in terms of magnitude, but the levels of damage were vastly

disparate.

Commissioner Adelman added that Bam is a poverty-stricken area with predominantly older buildings. He emphasized the tremendous human devastation caused by the earthquake.

Commissioner Shapiro asked for copies of the briefing reports prepared by the staff. He requested that the staff prepare and disseminate similar reports to commissioners for future earthquakes.

## **VII. LEGISLATION**

Director of Legislation Henry Sepulveda noted the recent earthquakes provide a good opportunity for the Commission to translate lessons learned into sound state policy.

### **Capitol Visits**

Mr. Sepulveda reported that the Legislature returned on January 5 for the second half of its 2003-04 legislative cycle. He said 10 commissioners visited 30 key legislators on January 6, 7, and 8. He added that the visits were generally well received and very worthwhile.

Commissioner Manning thanked the staff for arranging these meetings. He said his experience on January 7 was very positive, and there was much less hostility than he expected.

Commissioner Clark agreed that the visits to legislators were worthwhile. He emphasized the need to bring a clear message to the Legislature and educate them about the Commission's mission and activities.

Commissioner Shapiro commented that Commissioners Palmer and Parker were already well known to many legislators, so their presence was particularly helpful.

Commissioner Palmer commended the staff for strategically selecting the legislators who were visited. She noted many legislative staff members carefully reviewed the materials presented by commissioners. She added that it would have been beneficial to provide the materials in advance of the meetings.

Chairman Moy thanked the commissioners and staff who participated in this great team effort. He recommended arranging similar visits in the future.

Mr. Sepulveda suggested that the Commission might want to consider annual visits to legislators during the first week in January.

### **2004 Legislative Proposals**

Mr. Sepulveda noted the Commission and staff had previously discussed and agreed on four legislative proposals for the coming year.



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In terms of technical amendments to the Department of Insurance funding provisions for the Commission, Mr. Sepulveda said the staff has been working with legislative counsel on an omnibus bill that would include a provision to renumber sections of the Insurance Code. He noted the deadline for introducing legislation is the end of February.

Mr. Sepulveda said the Commission also discussed legislation to authorize a study and report on hazardous materials handling, similar to that done on USAR needs. He noted the staff will be meeting soon with the members of the USAR committee to gather their input, and then the staff will come back to the Commission with a recommendation for legislation.

Regarding the proposal to enhance USAR training efforts, Mr. Sepulveda reported that the staff is working to find a sponsor. He said the Commission's role would then be one of providing support. Mr. Sepulveda stated that he met with the Cal Chiefs organization on January 12 to discuss their involvement, but there was general consensus that sponsorship was unlikely because of limited funds. Instead, Cal Chiefs suggested forming a roundtable of various stakeholders involved in training, USAR, and terrorism, and using federal terrorism funds to support that effort. Mr. Sepulveda recommended that the Commission work with the roundtable once it is established. He expressed his opinion that a USAR training bill was not likely to emerge during this legislative session. He added that the Governor's reorganization plans may present an opportunity to involve other state agencies.

Mr. Sepulveda noted the fourth legislative proposal considered by the Commission was a change in the URM reporting law to replace annual reports with reports every five years. He said that in light of the recent San Simeon earthquake, the Legislative Advisory Committee reconsidered that recommendation and decided to propose a stronger response. Mr. Sepulveda said key elements would be a letter from the Commission to the Legislature reiterating concerns about the unsafe nature of URMs, legislation to remove temporary local regulations that may impede retrofit and constitute disincentives for building owners to perform retrofits, data-gathering to validate whether there is a connection between local restrictions and disincentives to retrofit, and placarding of URMs in Zone 4 to designate which buildings are hazards and which have been strengthened.

Mr. McCarthy proposed that the staff draft a short report on earthquake hazards to append to the Commission's letter to the Legislature. Mr. Sepulveda expressed his opinion that the Commission should proceed to send a letter as soon as possible to take advantage of the higher visibility of the URM issue after the recent earthquake. Chairman Moy agreed, and noted the Commission should strike while the iron is still hot.

Commissioner Palmer asked how long it would take to produce a report on the San Simeon earthquake. Chairman Moy suggested developing a report sometime after the March meeting so the testimony from locals can be incorporated. He recommended sending a letter to the Legislature immediately. Other commissioners agreed.

Commissioner Shapiro noted the state currently has a URM placarding requirement, but it is unclear whether placards can be removed once a building has been retrofitted. He suggested clarifying the existing law to allow owners of strengthened buildings to either remove or amend

the wording on the placards.

Chairman Moy asked whether local building officials supported the idea of decoupling restrictive local requirements from retrofit incentives. Mr. Sepulveda responded that Commissioner Adelman indicated that this kind of approach could work.

Mr. Sepulveda suggested that the staff work on developing a legislative concept for the items proposed by the Legislative Advisory Committee so legislation can be introduced by the end of February. He noted the Commission will not be meeting in February, so it would be advisable to authorize the Legislative Advisory Committee to make a decision on the four proposals.

**ACTION:** Commissioner Shapiro made a motion, seconded by Commissioner Clark, that:

*The Commission authorize the Legislative Advisory Committee and the staff to proceed with the four legislative proposals as recommended.*

\* Motion carried, 9 - 0 (Commissioner Adelman absent during voting).

Mr. McCarthy noted that besides working on the four legislative proposals, the Commission and staff will also be busy formulating positions on bills introduced by others. In particular, he said, there are likely to be further efforts to eliminate or weaken the Field Act. Mr. McCarthy added that the staff will be calling on commissioners to testify at legislative hearings as needed.

Mr. Sepulveda reported that Ms. Abby Browning had left in December for a position with a lobbying organization. He noted Ms. Browning was a tremendous help, and he expressed regret at losing her.

### **VIII. “WRITTEN IN STONE VIDEO” - CONTRACT REVIEW**

Dr. Pat Abbott, San Diego State University, announced completion of a 35-minute educational video providing general information on the geology and seismic history of California. He said the video was shown at two natural history museum events and will be officially premiered at Pasadena City College on January 16. He said San Diego State is working to get the video aired on major television networks. Dr. Abbott noted the Commission contributed \$26,000 for this kind of educational outreach, and about \$20,000 of that amount has been used so far. He offered to provide copies of the video to the Commission and other interested parties.

Dr. Abbott reported that the Southern California Earthquake Center (SCEC) is seeking funding for its printed publications. He introduced Mr. Mark Benthien, SCEC, and drew attention to the folder of sample publications provided for each commissioner. Dr. Abbott said SCEC is interested in making additional copies for teachers, educational groups, and members of the public.

Dr. Abbott noted that animation clips from the “Written in Stone” video will be incorporated in the Seismic Safety Commission’s Web site. Commissioner Jones invited commissioners to her office after the meeting to view the entire video.

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Dr. Abbott noted that the last section of the video deals with reducing earthquake losses. He noted the Seismic Safety Commission's Web site address is prominently displayed in the film credits and on the jacket cover.

Mr. Anderson said he previewed the final edited version of the video in December and was very impressed with the quality of the animation and the information provided. He commended Dr. Abbott and his staff at San Diego State University for their excellent work. Mr. Anderson suggested that the Commission consider producing a second educational video for the Bay Area to mark the 100th anniversary of the 1906 San Francisco earthquake.

### **XI. TSUNAMI MITIGATION PROGRAM (Out of Order)**

Chairman Moy proposed taking this item out of order to accommodate the guest speakers.

Dr. Eddie Bernard, National Office of Atmospheric Administration (NOAA), gave a slide and video presentation on NOAA's tsunami mitigation program. He said tsunamis can be produced from any kind of geological disturbance, including earthquakes. Because the entire Pacific Rim is vulnerable to seismic activities, tsunamis pose a major threat that should be addressed. Dr. Bernard observed that tsunamis tend to be very destructive because they involve high-velocity currents, strong oscillatory periods, and rapid onsets.

Dr. Bernard reviewed the history of tsunamis in the U.S. He said Alaska and Hawaii have both experienced devastating flooding as a result of tsunamis, and the same problems could occur in many locations along the West Coast. He noted public policy has typically focused either on defending against tsunami damage or providing warnings to the public. He described how inundation maps and tsunami detectors can provide useful planning information. He stated that the five affected western states (Alaska, Hawaii, Washington, Oregon, and California) have spent approximately \$20 million on tsunami mitigation programs to date.

Dr. Bernard advocated formation of a partnership between the states and federal agencies such as NOAA, USGS, and FEMA. He noted the *California Earthquake Loss Reduction Plan* includes a number of initiatives related to tsunami mitigation, including development of evacuation maps, improving warning systems, and raising public awareness. He described how use of seismometers and deep ocean buoys can improve warning capabilities, and he recommended using signs and maps to educate the public about the risk of tsunamis along the West Coast. For the future, Dr. Bernard recommended focusing mitigation on certain vulnerable targets and developing coastal construction guidelines. He said the ultimate goal is to build tsunami-resistant communities.

Commissioner Klein said he noticed tsunami-warning signs along beaches on the Oregon coast, and he asked if a similar program has been considered for California. Dr. Bernard responded that emergency managers from coastal communities have met to discuss what should be done, and they agreed that the first step should be developing inundation maps. After that, they recommend placing signs at strategic locations in all five affected states. Dr. Bernard commented that all five states should use signs that look the same so members of the public can

readily identify and understand the warnings. He said installation of signs would be up to each state. He added that Caltrans has been resisting the program because of funding constraints.

Commissioner Klein asked about the possibility of land use restrictions in tsunami hazard zones. Dr. Bernard responded that Oregon has taken an approach of using maps and designated zones where new construction is discouraged. He said critical facilities located within the hazard zones are required to conduct annual evacuation drills. Dr. Bernard commented that inundation maps are currently used only for emergency evacuations. He added that there is a strong fear that designating hazard zones would have a disastrous effect on real estate values in those areas.

Commissioner Klein asked if inundation maps were available to members of the public. Dr. Bernard responded that FEMA is currently updating its flood maps, and NOAA is assisting with that effort. He said the completed inundation maps are available at NOAA's Web site.

Dr. Jose Borrero, University of Southern California, discussed how California's tsunami hazard is being assessed. He said California inundation maps are currently being reviewed by OES. Dr. Borrero noted the inundation maps show lines indicating how far inland tsunami inundation could extend. He showed examples of the maps being developed for Goleta, California, an area just north of Santa Barbara. He said the extent of inundation depends on the source of the triggering event and its distance from a given area.

Commissioner Parker asked if there was any tsunami risk for San Francisco Bay. Dr. Borrero responded that some communities along the Bay experienced flooding after the 1964 Alaskan earthquake, so the potential exists.

Commissioner Shapiro noted the substantial drawdown of water in Hilo Bay preceding the tsunami actually had the effect of attracting people to the shore. Dr. Bernard commented that the media can be effective in teaching the public about how best to respond. He added that people in coastal communities need to know that if they can feel an earthquake, they should immediately seek high ground in case a tsunami results.

Mr. McCarthy observed that considerable progress has been made in addressing West Coast tsunami hazards. He noted this issue was identified in *California at Risk* and the *California Earthquake Loss Reduction Plan*, and both NOAA and FEMA are devoting more attention to mitigation.

Chairman Moy thanked Dr. Bernard and Dr. Borrero for their presentations.

## **IX. RESEARCH PLAN UPDATE**

Commissioner Jones drew attention to the draft Research Implementation Plan in the meeting packet and welcomed input from commissioners. She said the plan emphasizes the need for better coordination and recommends that the Seismic Safety Commission take a more active role. Commissioner Jones noted other major issues include the disconnect between investment in seismic reconstruction and ensuring that work is well done; the idea that supporting California earthquake centers is critical for the state; and the need to focus on specific technologies that are

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important to the state, such as shake maps and engineering products.

Commissioner Jones said the Research Implementation Committee plans to finalize the report in late February so it can be presented to the Commission for approval at the March meeting. She urged commissioners to submit comments and suggestions as soon as possible.

Mr. McCarthy noted the Research Implementation Plan is required by statute. He recommended sending the Research Implementation Plan to FEMA as soon as the Commission approves it.

### **X. UPDATE ON COMMISSION'S POST-EARTHQUAKE INVESTIGATION PROCEDURES GUIDE**

Commissioner Manning noted the Commission created its *Post-Earthquake Investigation Procedures Guide* in 1999 to clarify the Commission's goals in post-earthquake investigations. He said the document defines the roles and responsibilities of commissioners and staff and outlines how decisions should be made. The guide includes checklists; tips on items commissioners and staff should take with them when visiting a site, and instructions on what not to do. Commissioner Manning pointed out that the Commission's focus should be on gathering information and lessons rather than managing emergency response.

Commissioner Manning suggested discussing possible changes to the document at a future workshop meeting.

Chairman Moy expressed his opinion that the guide was thorough and adequate in its present form; he questioned the need to make changes.

Mr. McCarthy noted that when an earthquake occurs in California, Mr. Turner is sent to the clearinghouse site as soon as it is activated. The Commission staff then decides what kind of response is appropriate. If an investigation is warranted, the Commission requests the Department of Finance to activate the emergency investigations account. Mr. McCarthy cautioned that commissioners need to be careful that they do not get in the way of emergency responders. For that reason, he said, the Commission usually waits a few weeks before dispatching commissioners to conduct on-site investigations.

Chairman Moy encouraged commissioners to review the document and note any suggestions for improvements.

Chairman Moy also thanked Ms. Snyder for the instrumental role she played in helping the Commission develop the post-earthquake investigation procedures.

### **XII. PUBLIC COMMENT**

Ms. Pat Snyder, former Commission member and Commission chair, commented that the San Simeon earthquake demonstrated the success of the Seismic Safety Commission's efforts over the past couple decades. She noted retrofitted buildings generally performed well, and she congratulated the Commission for its staunch advocacy of seismic safety for the state. Ms.

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Snyder recommended that the Commission focus its attention on issues such as the damage to the middle school, how evacuation was conducted, and levels of damage that could have occurred if the Field Act had not been in place. She suggested looking at the link between people's behavior after an earthquake and the extent of injuries they suffered in both retrofitted and non-retrofitted buildings.

Ms. Snyder added that she was extremely proud of the Seismic Safety Commission and its accomplishments. She observed that when mitigation works well, people tend to be unaware of the work and effort that led to that success. She noted the Commission, with its small staff, is one of the best-kept secrets in state government. She commended the Commission for its excellent track record and extended her best wishes for success in the future.

Mr. McCarthy acknowledged and introduced Mr. Keith Wheeler, former Commission member, and invited him to address the Commission.

Mr. Wheeler said he was delighted to be present to see members of the Commission and staff again. He noted the Seismic Safety Commission performs an extremely valuable service for the state by bringing different groups together to work on a common goal.

## **XII. MISCELLANEOUS & GOOD OF THE MEETING**

There were no other items brought to the Commission's attention.

## **XIV. ADJOURNMENT**

Chairman Moy proposed adjourning the meeting in memory of the people who had been killed in recent earthquakes.

There being no further business, Commissioner Palmer made a motion, seconded by Commissioner Clark, that the meeting be adjourned. The meeting of the Seismic Safety Commission was adjourned at 12:55 p.m. in memory of the people killed in recent earthquakes.

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Karen Cogan  
Executive Assistant

Approved by:

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Richard McCarthy  
Executive Director